



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

DN A01087B

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2/1/03

In re application of

Ralph Craig Even

Paper No.: 7

Serial No. 10/040,170

Group Art Unit: 1713

Filed: October 22, 2001

Examiner: M.L. Reddick

For: AQUEOUS ACRYLIC EMULSION POLYMER COMPOSITION

DECLARATION UNDER 37 CFR 1.132

I, Ralph Craig Even of 1424 Mauck Road, Blue Bell, PA 19422, received my B.A. in Chemistry from Franklin and Marshall College in 1981. I have been employed by Rohm and Haas Company since 1981, currently as a Senior Chemist in Coatings Emulsion Polymer Synthesis.

Based upon my knowledge of the methods of US Patent No. 2,976,203 ("Young), a representative embodiment of those methods is given in Example 1 of that patent. Under my direction, that example was reproduced in my laboratory on November 21, 2002. A monomer emulsion was made by the addition of 2.5 parts itaconic acid to 10.5 parts methyl methacrylate, then 22.2 parts water, 3.0 parts Triton X-305, 0.5 part bromotrichloromethane and 87.0 parts ethyl acrylate were added. 71.1 parts water and 3.0 parts Triton X-305 were charged to the kettle. The kettle was then heated to maintain 80°C prior to initiation of the reaction. The catalyst cofeeds, consisting of 0.2 part ammonium persulfate, diluted by 3.33 parts D.I. water, and 0.25 part sodium hydrosulfite, diluted by 3.33 parts D.I. water were started just prior

to the start of the monomer emulsion. All three fed for approximately one hour. Below is a time/temperature log, including the recorded pH values:

Time (min)	Temperature (°C)	pH	Observations
0	79.9		Begin catalyst cofeeds and ME feed
4	80.2	2.7	
17	79.3	2.3	
32	79.7	2.2	
45	80.0	2.2	
63	80.1		End ME feed
67	79.7	2.2	End catalyst cofeeds

I conclude that aqueous emulsion polymer of Young was not formed at a pH of from 4 to 8.

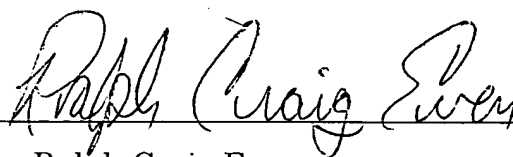
Similarly, based upon my knowledge of the methods of US 3,238,159 ("DiBenedetti") and US 3,238,159 ("Wolff"), a representative embodiment of those methods is given in Example 17 of each patent (the same Example). Under my direction, that example was reproduced in my laboratory on November 18, 2002. A monomer mixture was made by the addition of 2.0 parts allyl alcohol to 10.0 parts monobutyl itaconate, then the addition of 88.0 parts ethyl acrylate. 150 parts D.I. water and all surfactants, 1 part (dry) each of Polystep B-5 (chemically equivalent to Duponol WAQE), Aerosol 22, Tergitol NP-30 (chemically equivalent to Igepal CO887), and 0.2 part (dry) of Polystep F-4 (chemically equivalent to Tergitol NP-10), were charged to the kettle. The kettle was then heated to maintain 30°C prior to initiation of the reaction. The initial catalyst, 0.5 part t-BHP, and promoter, 0.0625 part ascorbic acid diluted by 2.44 parts D.I. water, were charged in succession, then the monomer mixture seed, 30% of total monomer mixture, was added.

The temperature of the kettle dropped to 29.1°C, followed by a weak exotherm. After 12 minutes, the promoter feed, consisting of 0.1875 parts ascorbic acid diluted by 7.6 parts D.I. water, was started and a pH reading was taken (3.7). Another pH reading was taken at 42 minutes (3.54). At 45 minutes, and after a total temperature rise of 3°C, the monomer mixture feed was started. The monomer feed was interrupted periodically throughout the total reaction time. The promoter feed, which fed for 17 minutes after the end of the monomer feed, was continuous. Below is a time/temperature log, including the recorded pH values:

Time (min)	Temperature (°C)	pH	Observations
0	29.8		Add t-BHP, add promoter
2	29.9		Add monomer seed
15	29.4	3.7	
44	33.2	3.54	
47	33.7		Begin monomer feed
63	42.3	3.39	
80	63.1	3.30	
93	69.5	3.10	
109	71.4	2.80	
119	72.2		End monomer feed
120	72.3	2.65	
136	69.9	2.55	End promoter feed
152	30.8		Add FeSO ₄
163	70.8	2.85	Peak exotherm after addition of FeSO ₄

I conclude that the aqueous emulsion polymers of DiBenedetti and Wolff were not formed at a pH of from 4 to 8.

I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under the United States Code and such willful statements may jeopardize the validity of any patent application or patent issued thereon.


Ralph Craig Even



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CERTIFICATE OF MAILING

I hereby certify that the following correspondence is being deposited as first class mail with the United States Postal Service in an envelope addressed to the Assistant Commissioner for Patents, Washington, DC, 20231 on the date indicated next to my signature below.

Amendment
Declaration under 35 USC 1.132

DATE: Dec 19, 2002

SIGNATURE: